CONFERENCE ON DISARMAMENT

CD/1105
23 August 1991

Original: ENGLISH

REPORT OF THE AD HOC COMMITTEE ON PREVENTION OF AN ARMS RACE IN OUTER SPACE

I. INTRODUCTION

1. At its 582nd plenary meeting on 14 February 1991, the Conference on Disarmament adopted the following decision:

> "In the exercise of its responsibilities as the multilateral disarmament negotiating forum in accordance with paragraph 120 of the Final Document of the First Special Session of the General Assembly devoted to disarmament, the Conference on Disarmament decides to re-establish an Ad Hoc Committee under Item 5 of its agenda entitled 'Prevention of an arms race in outer space'.
>
> The Conference requests the Ad Hoc Committee, in discharging that responsibility, to continue to examine, and to identify, through substantive and general consideration, issues relevant to the prevention of an arms race in outer space.
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> The Ad Hoc Committee, in carrying out this work, will take into account all existing agreements, existing proposals and future initiatives as well as developments which have taken place since the establishment of the Ad Hoc Committee, in 1985, and report on the progress of its work to the Conference on Disarmament before the end of its 1991 session."

2. In that connection a number of delegations made statements regarding the scope of the mandate.

II. ORGANIZATION OF WORK AND DOCUMENTS

3. At its 582nd plenary meeting on 14 February 1991, the Conference on Disarmament appointed Ambassador Roberto García Moritán of Argentina as Chairman of the Ad Hoc Committee. Mr. Vladimir Bogomolov, Political Affairs Officer, United Nations Department for Disarmament Affairs, served as the Committee's Secretary.

4. The Ad Hoc Committee held 17 meetings between 26 February and 20 August 1991.

5. At their request, the Conference on Disarmament decided to invite the representatives of the following States not members of the Conference to participate in the meetings of the Ad Hoc Committee: Austria, Chile, Colombia, Costa Rica, Denmark, Finland, Greece, Ireland, Malaysia, New Zealand, Norway, Oman, Portugal, Senegal, Spain, Switzerland, Syria, Turkey, United Arab Emirates, Uruguay, Viet Nam and Zimbabwe.

6. In addition to the documents of the previous sessions 1/, the Ad Hoc Committee had before it the following documents relating to the agenda item submitted to the Conference on Disarmament during the 1991 session:

CD/1059	Mandate for an Ad Hoc Committee under item 5 of the agenda of the Conference on Disarmament entitled "Prevention of an Arms Race in Outer Space".
CD/1073	Letter dated 12 March 1991 addressed to the Secretary-General of the Conference on Disarmament from the Permanent Representative of Canada, transmitting compendia on Outer Space comprising plenary statements and working papers from the 1990 session of the Conference on Disarmament.
CD/1087	Letter dated 8 July 1991 addressed to the President of the Conference on Disarmament from the Deputy Representative of the United States to the Conference on Disarmament transmitting a statement delivered on 25 June 1991 by Ambassador David J. Smith, Chief United States Negotiator for the Defence and Space Talks in the Ad Hoc Committee on Prevention of an Arms Race in Outer Space of the Conference on Disarmament.
CD/1088	Letter dated 27 June 1991 addressed to the Secretary-General of the Conference on Disarmament from the Permanent Representative of Canada, transmitting the Arms Control Verification occasional paper No. 7, entitled "Satellites Harming Other Satellites."
CD/1095	Letter dated 5 August 1991 addressed to the Secretary-General of the Conference on Disarmament from the Permanent Representative of Canada, transmitting the Arms Control Verification Occasional Paper No. 6, entitled "Overhead Imaging for Verification and Peacekeeping: Three Studies".
CD/OS/WP.43	Programme of Work.

1/ The list of documents of the previous sessions may be found in the 1985, 1986, 1987, 1988, 1989 and 1990 reports of the Ad Hoc Committee, and in the special report to the third special session of the General Assembly devoted to disarmament (CD/642, CD/732, CD/787, CD/870, CD/834, CD/956 and CD/1039, respectively).

CD/OS/WP.44 Working paper entitled "Status of Treaties Relating to Space Activities", submitted by the Secretariat.

CD/OS/WP.45 Working paper entitled "The concept of confidence-building and predictability measures in space activities of States", submitted by the Soviet Union.

CD/1092
CD/OS/WP.46 Working paper entitled "Prevention of an arms race in outer space: Confidence Building Measures and Transparency", submitted by France.

CD/OS/WP.47 Working paper entitled "The Problem of Debris and Military Activities in Space", submitted by Italy.

CD/OS/WP.48 Working paper entitled "Confidence and Security Building in a Protection Regime for Outer Space", submitted by Germany.

CD/OS/WP.49 Working paper entitled "Terminological issues relevant to the prevention of an arms race in outer space", submitted by the Friend of the Chairman, The Hon. A. Monckton of the United Kingdom of Great Britain and Northern Ireland Delegation

CD/OS/WP.50 Working paper entitled "Issues related to ASATs", submitted by the Friend of the Chairman, Dr. M. Karem of the Delegation of Egypt

CD/OS/WP.51 Working paper entitled "Confidence-building measures in space activities", submitted by the Friend of the Chairman, Mr. M. Antuykhin of the Delegation of the Union of Soviet Socialist Republics

III. SUBSTANTIVE WORK DURING THE 1991 SESSION

7. Following an initial exchange of views and consultations on the programme and organization of work held by the Chairman with various delegations, the Ad Hoc Committee, at its 1st meeting on 26 February 1991 adopted the following programme of work for the 1991 session:

"1. Examination and identification of issues relevant to the prevention of an arms race in outer space;
2. Existing agreements relevant to the prevention of an arms race in outer space;
3. Existing proposals and future initiatives on the prevention of an arms race in outer space.

In carrying out its work with a view to finding and building upon areas of convergence, the Ad Hoc Committee will take into account developments which have taken place since the establishment of the Committee in 1985."

8. With regard to the organization of work, the Ad Hoc Committee agreed that it would give equal treatment to the subjects covered by its mandate and specified in its programme of work. Accordingly, the Committee agreed to

allocate the same number of meetings to each of those subjects, namely, issues relevant to the prevention of an arms race in outer space, existing agreements and existing proposals and future initiatives. It was noted that any member wishing to do so may discuss any subject important and relevant to the work of the Committee.

9. The work of the Ad Hoc Committee was governed by the mandate which aims at the prevention of an arms race in outer space.

10. A general exchange of views was held during the 17 meetings which the Ad Hoc Committee devoted to substantive work including the presentation and examination of specific proposals for measures. All the delegations welcomed the prompt re-establishment of the Ad Hoc Committee and the new methodological approach applied.

11. To enhance the functioning of the Committee in qualitative terms during the first part of the annual session three non-binding indicative lists of topics based on the main aspects considered in 1990 were circulated by the Chairman. The debate in the Committee dealt inter alia with the subjects referred to in the Chairman's lists of topics relating to the three items on the programme of work and attached in the Annex.

12. In the second and third part of the annual session the work of the Committee was facilitated through the assistance of Friends of the Chairman who were appointed to deal with the following specific issues in open-ended consultations:

a) terminological aspects related to prevention of an arms race in outer space (The Hon. Anthony Monckton, Delegation of the United Kingdom of Great Britain and Northern Ireland)

b) issues related to verification of ASATs (Dr. M. Karem, Delegation of Egypt)

c) confidence-building measures including improvement of existing and future databases relating to space activities (Mr. M. Antuykhin, Delegation of the USSR)

Each Friend of the Chairman presented, at the end of the session, a report containing the preliminary outcome of those consultations. Those reports are contained in the following working papers:

CD/OS/WP.49 entitled "Terminological issues relevant to the prevention of an arms race in outer space"

CD/OS/WP.50 entitled "Issues related to ASATs"

CD/OS/WP.51 entitled "Confidence-building measures in space activities"

It was understood that those reports were presented by the Friends of the Chairman under their own responsibility, without prejudice to positions of

delegations, with the aim of facilitating any future consideration of the issues.

13. The Committee also benefitted from the scientific and technical contributions of experts from various delegations who addressed the specific issues and initiatives under consideration in the Committee relevant to the prevention of an arms race in outer space.

A. Examination and identification of issues relevant to the prevention of an arms race in outer space

14. There was general recognition of the importance of the bilateral negotiations between the Union of Soviet Socialist Republics and the United States of America and it was stressed that bilateral and multilateral efforts were complementary. Many delegations emphasized that those negotiations did not diminish the urgency and the importance of multilateral efforts and reaffirmed that, as provided for in General Assembly resolution 45/55A, the Conference on Disarmament, as the single multilateral disarmament negotiating forum, had the primary role in the negotiation of a multilateral agreement or agreements, as appropriate, on the prevention of an arms race in outer space in all its aspects.

15. The Group of 21 considered that there was an urgent need to address this important agenda item so as to achieve progress. For this reason, the Group took a flexible position on the question of the programme of work although it would have preferred the Committee to work under a negotiating mandate. It was felt that the new methodology applied to the work of the Committee would create new opportunities to advance from generality to specificity, allowing the Committee to enhance its functioning in qualitative terms.

16. The Group of Western States welcomed the adoption of the same programme of work as in the previous years and equal allocation of time between the three main items of the programme of work. It thought that this formal framework implemented with due flexibility provided the best structure for the discussions while enabling each delegation that so wished to express its position and to make a contribution to the common search for areas of convergence envisaged in the programme of work.

17. Many delegations of the Group of 21 underlined that in an era where the confrontation between the United States and the Union of Soviet Socialist Republics had eased, other states on planet earth had reasons to hope that arms deployed on ground would not be supplemented with a threat from space that would provoke a counter and help in spiralling the arms race further into outer space.

18. Many delegations reiterated that outer space was the common heritage of mankind and as such should be used exclusively for peaceful purposes, thus making it of vital importance to prevent an arms race in outer space. They pointed out that to date the Conference had performed useful work in identifying and clarifying the various aspects of this complex item and had before it numerous proposals aimed at perfecting the existing legal régime. In their view, the Conference should urgently fulfil its role by elaborating new instruments of a legal character which would, in an all-embracing and multilateral way, tackle the issue of the non-militarization of outer space.

19. Some delegations belonging to the Group of Eastern European and other States reiterated that the issues of prevention of an arms race in outer space by joint efforts of all members of international community had a key meaning for international security and for strengthening of strategic stability. They considered necessary to provide on this track of disarmament a fruitful combination of multilateral and bilateral approaches. In their view, at the present time, the Conference on Disarmament was the most appropriate forum for arrangements to keep outer space free from weapons.

20. One delegation of the Western Group, having recalled the interpretation of the 1967 Outer Space Treaty according to which that instrument did not prohibit all military activities in space, stated that some stabilizing military activities deserved to remain authorized. Besides, it was sometimes impossible to distinguish some civil activities from military ones. Therefore, it was preferable to concentrate on the prevention of any aggressive use of space. Moreover, that delegation stressed the difficulties of a comprehensive prohibition of antisatellite weapons as such, since any space objects and ballistic missiles, as well as many ground-based systems, had potential antisatellite capabilities.

21. One delegation of the Group of 21 pointed out that "peaceful" could not be equated with non-aggressive and it could only be interpreted to exclude "military uses".

22. One delegation belonging to the Western Group said that the role of the Ad Hoc Committee and that of UNCOPUOS were separate and distinct. If the Ad Hoc Committee was to make any progress the same delegation suggested that two areas merited further study: definition and verification. A glossary of terms and definitions would provide the Committee with a more solid foundation for its discussions. Equally no arms control agreement in space could hope to be sustainable without effective verification.

23. One delegation not belonging to any Group held the view that the prevention of an arms race in outer space and the peaceful utilization of it was the common aspiration of mankind. It reiterated that its State had all along been opposed to the arms race in outer space and stood for the complete prohibition and thorough destruction of all kinds of space weapons. It pointed out that in spite of the preliminary achievements in the nuclear and conventional disarmament, the arms race in outer space between the two major space powers had not ended but on the contrary had taken on a new trend. Hence preventing an arms race in outer space had become a major task in the field of disarmament. In its view the arms race in outer space based on the latest development in science and technology was a qualitative escalation of the arms race in nature, which not only posed a threat to international peace and security but was also detrimental to the activities aimed at the peaceful use of outer space. Furthermore, it considered that it would have an adverse effect on the disarmament process. Confronting with such a reality it stood to reason for the international community to demand that the two countries with the largest space capabilities bear special responsibilities in preventing an arms race in outer space. It took note of the bilateral negotiations on space issues between the two major space powers and pointed out that so far nothing substantive had been achieved. It held the view that in order to effectively prevent an arms race in outer space it was necessary that the two countries with the largest space capabilities should immediately adopt practical measures in undertaking not to develop, test and deploy any types of space weapons and destroy all the existing ones, including both anti-ballistic missiles and anti-satellite weapons, and on the basis of this, conduct serious negotiations with a view to concluding an agreement that completely bans all space weapons. While stressing the importance of the existing international legal instruments, it pointed out their insufficiency as well as the need to negotiate new international legal instruments. It stated that as the sole multilateral forum of disarmament negotiations, the Conference on Disarmament should start as soon as possible negotiations on an international convention on the complete prohibition of outer space weapons and on the prevention of arms race in outer space.

24. The Group of 21 emphasized the need for in-depth treatment of matters under item 3 of the work program "Existing proposals and future initiatives on the prevention of an arms race in outer space".

25. Members of the Group of 21 having brought up certain comprehensive proposals, pointed out that there was a need to further analyse limitations of

article IV of the Outer Space Treaty under the perspective of the régime applicable to outer space as distinct from the one confined to the moon and other celestial bodies. Some proposals related to an amendment of the Outer Space Treaty and to transforming it into a comprehensive Treaty.

26. As to confidence-building measures, the Group of 21 recalled United Nations General Assembly resolution 45/55 B, which reaffirms the importance of confidence-building measures as a means conducive to ensuring the attainment of the objective of the prevention of an arms race in outer space and recognizes their applicability in the space environment under specific criteria yet to be defined.

27. According to many delegations there appeared to be a general recognition that the Committee could usefully consider confidence-building measures including data-base improvements relevant to the mandate of the Committee and in consonance with evident complementarities of bilateral and multilateral efforts in this area.

28. Members of the Group of 21 consistently addressed the question of a comprehensive ban of anti-satellite weapons, including a ban on testing in an ASAT mode of other weapons devices. In the context of measures pertaining to ASATs while recognizing the verification challenges connected with measures to prevent an arms race in outer space, the Group of 21 found it logical that these issues became the subject of more concrete deliberations and negotiations. The Group suggested that it might be useful in that connection to address the question of identifying technical means to support observation and verification functions pertaining to different relevant measures.

29. On the subject of immunity of satellites many delegations stressed an increasingly important role of satellites in a variety of fields. For these delegations the spread of satellite technology had generated enormous opportunities for developments in the field of economic growth and international security and it was imperative that the international community safeguard the increasing positive developments of satellite technology on an urgent basis. It was acknowledged by those delegations that some amount of immunity had been provided to satellites by the 1967 Outer Space Treaty in relationship with Article II, paragraph 4 of the UN Charter. Under bilateral agreements between the United States and the Union of Soviet Socialist Republics protection was also provided by prohibiting interference with national technical means. This régime was on the one hand limited in scope and on the other not universal. Further development of a regime providing for immunity of satellites would not run contrary to the UN Charter.

B. Existing agreements relevant to the prevention of an arms race in outer space

30. Much attention was paid to the principles and provisions of international law relevant to the prevention of an arms race in outer space. Some delegations of the Western Group underlining the central role of the Charter of the United Nations stressed the special significance of paragraph 4 of Article 2 and Article 51. They emphasized that Article 2(4) prohibited the threat or use of force against the territorial integrity or political independence of any State. Complementing Article 2(4), Article 51 permitted States to exercise their inherent right of individual or collective self-defense. These delegations thus concluded that when read together, these two Charter provisions strictly prohibited the use of force in all instances except for individual or collective self-defense.

31. Many delegations recalled that the Outer Space Treaty was a response to the challenges that space technology created in the 1960s. Some of them stressed that the first paragraph of article IV of the Treaty, represented a legal loophole exploited by some space powers to develop a new generation of weapons that could be placed in outer space. There was almost unanimous recognition of the fact that the legal régime did place some limitations on certain weapons and military activities in outer space. However it was equally emphasized that existing legal instruments left open the possibility of the introduction of weapons in space, other than nuclear weapons or other weapons of mass destruction.

32. One delegation of the Group of 21 stated that the Outer Space Treaty of 1967 banned nuclear weapons and other weapons of mass destruction from space. However, there was no legal bar at present to the development of large lasers that some would hope could eventually be capable of countering missiles in their boost phase.

33. Many delegations reiterated that the present legal régime governing outer space was not adequate to guarantee the prevention of an arms race occurring in outer space. It was noted that General Assembly resolution 45/55A recognized the urgency of preventing an arms race in outer space and requested the Conference on Disarmament to undertake negotiations for the conclusion of binding agreement or agreements, as appropriate. While recognizing the significant role played by that régime and the need to consolidate and strengthen it and its effectiveness, several delegations called for the total prohibition of the development, production, stationing, stock-piling and use of space weapons and the destruction or transformation of existing weapons.

34. One delegation of the Western Group believed that the existing legal régime for arms control in outer space was equitable, balanced and extensive. The current regime placed some legal restraints on virtually every type of weapon in outer space and recurring predictions of an impending arms race in outer space had not been borne out. Therefore the allegations of its insufficiency were overstated. A legal régime, in and of itself, was not sufficient to prevent an arms race in outer space because one needed compliance with that regime, its enforcement and participation in that regime.

35. One delegation of the same Group, while recognizing that the existing legal régime was insufficient to prohibit some potentially threatening activities and was partially based on bilateral agreements subject to different interpretations or withdrawal, affirmed that the prohibition to deploy any weapon in space would be neither realistic nor efficient: it could indeed limit some stabilizing activities and at the same time would not take account of the other threats to space activities.

C. Existing proposals and future initiatives on the prevention of an arms race in outer space

36. The Group of 21 recalled its proposal for the Ad Hoc Committee to have a negotiating mandate. The Group held the position that the Committee should focus on concrete proposals for measures with a view to conducting negotiations for the conclusion of an agreement or agreements, as appropriate, to prevent an arms race in outer space in all its aspects.

37. Some delegations of the Western Group, while agreeing to discuss and study the proposals put forward before the Committee, considered that political conditions were not ripe for in-depth negotiations on these proposals, or were not convinced that they were suitable areas for multilateral consideration.

38. It was stressed by some delegations that although so far no armed conflict in outer space had taken place, mankind could not shut the eyes to history and to scientific and technological developments that were taking place and presume that there would not be any such incident in the future. The importance of what had been left uncovered by the Outer Space Treaty and other related measures two decades ago had grown and the shortcomings had become strikingly more evident.

39. One delegation, a member of the Group of 21, stressed that Article IV of the Outer Space Treaty, contained a built-in limitation, as its scope did not extend to banning all types of weapons in outer space. It prohibited inter alia, the placing, installing or stationing of nuclear weapons and other

weapons of mass destruction only. Its provisions did not therefore contain a clear-cut injunction to ensure that outer space is used exclusively for peaceful purposes. In the view of this delegation the principle of exclusive use for peaceful purposes applied only to the Moon and other celestial bodies and the only restriction placed on States parties pertained to the prohibition of the establishment of military bases, installations and fortifications, the testing of any type of weapon and the conduct of military manoeuvres on celestial bodies. The delegation considered that this meant that there was an inherent contradiction in the same article of the Treaty, thereby creating as a result not one but two legal régimes - one applicable to outer space and the other confined to the Moon and other celestial bodies. Therefore it was of the view that the general objective should aim at establishing one legal régime for outer space as well as the Moon and other celestial bodies. It maintained that this could only be realized through a clear-cut provision declaring that outer space shall be used exclusively for peaceful purposes.

40. One delegation reiterated its proposal contained in document CD/851 seeking to amend Article IV of the Outer Space Treaty. It stressed that the proposal was aimed to fill in an important juridical vacuum in the Outer Space Treaty and to prevent the stationing in outer space of weapons other than nuclear and mass destruction weapons.

41. Many delegations of the Group of 21 touched upon the destabilizing aspects of ballistic missile defences. The development, testing and deployment of active space systems, i.e. weapons with direct destructive effects to be used for anti-ballistic or ASAT tests, would run counter to the spirit of the Outer Space Treaty. An ASAT test-ban appeared to be the most effective way of rendering protection to satellites, in comparison with ideas such as creating immunity to the space segment of a satellite system as well as to areas surrounding a satellite. This could also have the advantage of leaving a way out with respect to the difficult questions pertaining to defining the functions of satellites, which might be of dual civil and military character, or could be supportive of both passive and active military systems. It had been proposed by many delegations that the present de facto moratorium by the two major space powers on testing of existing dedicated ASAT-systems, should be formalized. Furthermore, a banning of non-dedicated weapons devices would have to be directed at the testing of such weapons devices in an ASAT-mode. Such a functional approach had had a precedence in the ABM Treaty, which had referred to "testing in an ABM mode". When dealing with identification of technical means to support observation or verification

functions, this could be done in relation to confidence-building measures, leading to more concrete measures to prevent an arms race in outer space.

42. In connection with the reiteration of some proposals for a comprehensive ASAT ban, one delegation of the Western Group stated that it did not believe that verification schemes proposed to date were adequate for this purpose. A key problem was verifying compliance with such an agreement. Another problem concerned the legal issue of how ASAT weapons should be defined and categorized. The delegation reiterated that the existing legal regime placed a wide variety of legal restraints on the nature, deployment and uses of ASATs. It stated that conventionally-armed ASAT weapons that lacked an ABM capability and that were not armed with nuclear weapons were currently not limited by any arms control agreement.

43. Some delegations of the Group of 21 stated that not only were national technical means of verification adequate to detect and verify testing of space weapons in an ASAT mode including the "direct ascent attack mode" but a mutually agreed definition of dedicated ASAT weapon did exist. Once listing of directed energy weapons like ground-based lasers which were a threat to satellites is fully under way, more complex understandings would need to be negotiated. The unconstrained development of ASAT systems was a means of avoiding the limits on BMD development set by the ABM treaty. If lasers could be construed in terms of total brightness, their potential to attack satellites in high orbit would be controlled. It was easily conceivable to impose first use limitations, rules-of-the-road agreements and limited capability restriction on ASATs like dismantling of existing systems and test limits. These elements needed to be put together for a comprehensive ban on satellite intercept capability, which would mean restricting military space activities or undertaking them cooperatively, prohibiting all forms of anti-satellite defences, satellite ballistic missile defence and many offensive and laser systems.

44. One delegation reiterated its proposal (contained in CD/939) to amend Article IV of the Outer Space Treaty so as to make its prohibition applicable to any kind of weapons and to contemplate the negotiation of an Additional Protocol for the purpose of prohibiting the development, production, storage and deployment of anti-satellite weapon systems which were not stationed in outer space. The proposal provided also for a second additional protocol to deal with the verification system to ensure faithful compliance with the obligations assumed by the States Parties.

45. Confidence-building and predictability measures of States' activities in

outer space found positive response of some delegations. In this connection, the concept of "open outer space" was further elaborated by one delegation belonging to the Group of Eastern European and other states. It was proposed that this concept should become a subject of consideration at the Conference on Disarmament. In the view of that delegation the key elements that could form the basis of a future multilateral agreement on confidence-building and predictability measures in space activities of States should include the following measures: 1) the strengthening of the 1975 Convention on Registration of Objects Launched into Outer Space; 2) the elaboration of "rules of the road" - "a code of conduct"; 3) the use of space-based monitoring equipment in the interest of the international community; and 4) the establishment of an International Space Inspectorate. The same delegation suggested that the elaboration of a set of confidence-building measures, transparency and predictability could be the most realistic initial step to keep outer space free from weapons. It circulated at the Committee a working paper entitled "The concept of confidence-building and predictability measures in space activities of States" (CD/OS/WP.45) which had integrated the ideas previously advanced at the Committee.

46. On the question of the functioning of the Registration Convention some delegations reiterated their proposals on the strengthening of the régime established by the Convention. They observed that by providing specific information about the nature and functions of objects launched into space, the Convention constituted an indispensable database for any subsequent development designed to generate confidence in the uses of outer space. These delegations also indicated that the changes in the régime should apply on two levels, one being the scope of the information to be provided and the other the timeliness. Additional parameters and information should be added to the items already present in article IV of the Convention and to that effect a duly mandated Expert Group under the auspices of the Ad Hoc Committee should be entrusted with the responsibility to devise those criteria.

47. Some delegations asserted that the need for data bases was felt by all delegations and the Registration Convention was a source that was now realised to be inadequate. They recalled that several proposals for the extension of data bases relating to space activities had been put forward by delegations from all Groups. Nothing in the Registration Convention prevented the CD or an expert group set up to assist the work of the Ad Hoc Committee as had been proposed by a number of delegations, from examining the information contained in the declarations under the Convention, which was a public registry.

48. In that connection one delegation of the Western Group remarked that although the topic "Registration Convention" was listed under the heading of CBM, the Convention, in its view, was not an arms control or confidence-building instrument. Wider adherence to the Convention and compliance with its current provisions would be the best way of strengthening it.

49. Many delegations touched upon the verification issues indicating that consideration of these questions would constitute an important and integral part of the Committee's work, given the technological, political, commercial and even doctrinal aspects involved in considering a strengthened outer space regime. They reiterated the importance of verification and the desirability of multilateral involvement therein.

50. One delegation, member of the Western Group, put forward views on verification and stated that the inability to construct a suitable and effective verification system could prevent agreements from being finalized. The move towards expanding arms control in outer space would require addressing carefully the problems stemming from the fact that space represented a relatively new medium and posed challenges for arms control, involving capabilities which could be entirely different from, but nevertheless interdependent with those employed on the earth's surface. Major verification problems were likely to arise as a result of the need for worthwhile space regimes to cover not only objects and activities in space but also those on the earth's surface related to space. Both environments should be considered in their interrelationship. This delegation noted that while many countries might have an interest in space, and would thus wish to be equal partners in any agreement, the technical capabilities necessary for satisfactory verification might be available to only a few.

51. Another delegation, also a member of the Western Group, added its support to the above-mentioned position saying that no arms control agreement in space could hope to be sustainable without verification. It suggested that it would be useful to evaluate the cost of some of the proposals already put before the Committee and to consider how these costs might be met.

52. The Head of a delegation to the bilateral Defense and Space Talks spoke to the Committee about the revised approach to ballistic missile defense called "Global Protection Against Limited Strikes" (GPALS). The GPALS shifted the focus of strategic ballistic missile defense away from deterrence of a strategic ballistic missile attack to protection against the emerging and limited ballistic missile threat. A GPALS defense would include various

sensors and three ground and space-based interceptors to ensure global coverage against missiles of all ranges. Any meaningful deployment of BMD would require a change in the legal regime established by the ABM Treaty. This State sought to negotiate within the Defense and Space Talks a cooperative transition to allow increased reliance on strategic BMD. This State continued to offer a mechanism to permit deployment of defenses beyond the ABM Treaty following three years' discussion of specific measures for implementing a cooperative transition.

53. Some delegations made reference to the ABM Treaty. One of them belonging to the Group of 21 noted that various political and technological factors posed important challenges and opportunities for the Treaty regime as it placed restrictions on testing weapons in an ABM mode but permitted weapons to be tested in an ASAT mode. It was due to this lacunae that "direct ascent attack" by ballistic missiles could be considered for offensive purposes. Under the existing legal systems pertaining to space, there was no clear provision that the premeditated development of space based ASAT weapons, or their components or even their stationing violated the law, especially that pertaining to the Outer Space Treaty. For the same delegation some recent experiments and strategic initiatives like the SDI and GPALs raised important questions about compliance with the ABM Treaty.

54. One delegation belonging to the Western Group in its expert presentation introduced the results of the research dealing with definitions and terminology which was called "Harmfulness Indexing" method. Its basic purpose was to attempt to quantify the effectiveness with which any space object could be used as a weapon. In the view of the delegation the method of quantifying harm was well suited to Article IX of the Outer Space Treaty. Another concept of vulnerability indexing dealt with the assessment of a spacecraft's vulnerability to any given threat. The harmfulness indexing methodology provided clues as to what made spacecraft harmful and how this might be regulated through arms control measures. The same delegation presented new approaches to the concept of keep-out zones (KOZ). Past suggestions for K O Z had focused on establishing protected volumes in space such as the concentric spherical shells called "space-fences", while the proposed concept of the "free space" KOZ involved two stipulations: satellites should remain outside the minimum keep away distance at all times and satellites might remain within the flyby distance for a period of time no longer than the maximum flyby time. The delegation viewed the creation of KOZ as an effective confidence-building measure. The installation of beacons on satellites was

suggested as a possible means of ensuring accurate data on their location relative to KOZ.

55. One delegation of the same Group recalled its proposal of a step-by-step approach, starting with the adoption, by the international community, of the principle of non-interference with non-agressive space activities, which should form the basis of a régime of confidence-building measures. In a working paper (CD/1092 - CD/OS/WP.46) and in an expert presentation, it developed its proposal for the reinforcement of the 1975 Registration Convention, for rules of conduct for space objects, for measures of transparency and for an International Trajectory Centre. It also introduced a proposal for regional transparency agencies, providing for access to satellite imagery in the framework of regional agreements on confidence- and security-building measures.

56. The delegation of another Western State, in an expert presentation (contained in Document CD/WP/OS.48), also focussed on the confidence- and security-building aspects to be included in the provisions of a Protection régime for outer space. It considered that transparency and restraint in space activities should be promoted by a code of conduct supplemented by registration and notification measures linked to rules of the road for in-orbit space objects for better monitoring as well as to keep-out zones. Proposals for strengthening the requirements of registration and notification could be enhanced by pre-launch inspection of space objects. According to the expert, unlike weapon-related agreements, a Protection régime for outer space would allow a more general assessment of capabilities, with provisions which would differ considerably in terms of stringency and intrusiveness of monitoring. It would be possible to combine the three areas of declaratory, intentional and substantial confidence- and security-building measures.

57. Another Western delegation in an expert presentation briefed the Ad Hoc Committee on the possibilities of current and future space technologies for disarmament verification. The expert indicated that in order to achieve effective verification it could be advantageous to use a combination of mutually reinforcing methods in a staged approach. After a short survey of the present technical possibilities the expert spoke of the future of the verification-related space technology in Europe. In this respect he introduced the EUCLID Programme of the Independent European Programme Group (IEPG), and the Programme of the Western European Union (WEU). He stressed that a good cooperation among all the technical space, aerial and ground-based means could provide guarantees for the prevention of a new arms race.

58. An expert from another Western delegation addressed the problem of debris and military activities in space (CD/OS/WP.47, 2 August 1991) trying to assess the danger posed to artificial satellites by orbiting debris. He indicated that military activities in space constituted a large fraction of the total debris population and deployment and the testing of weapons in space would contribute to its further growth. To ensure safe space activity for all, including military operations, an international regime was called for. Some actions which could and should be taken about the debris problem were mentioned, including care about launch operations, keeping of the physical integrity of spacecraft, avoidance of deliberate fragmentation of spacecraft and rockets. It was underlined that plans for any space-based weapon system should be completely revised.

59. One expert from a delegation belonging to the Group of 21 addressed possibilities of monitoring testing of existing and potential ASAT weapons. A number of ways that satellites could be made inoperational were indicated. Among the future potential ASAT weapons mention was made of lasers, space mines, brilliant pebbles, high power microwaves, rail-guns, and neutral particle beams. It was said that during testing the characteristic parameters of weapons systems should show up. Among the various ways to monitor weapons and weapons testing photographic, heat detection, radar, electromagnetic fields detection, radiometric scattering, and probing techniques were discussed. Tagging was mentioned as one example of cooperative measures. With novel encryption techniques, very high degrees of security and authenticity could be obtained. Some of the non-dedicated ASAT weapons were said to be hypothetical in contrast to the monitoring techniques, which already had existed for some time in many cases, although an elaboration of these techniques in relation to a realization of the potential weapons concepts was claimed to be necessary.

IV. CONCLUSIONS

60. There continued to be general recognition in the Ad Hoc Committee of the importance and urgency of preventing an arms race in outer space and readiness to contribute to that common objective. The work of the Committee since its establishment in 1985 has contributed to the accomplishment of this task. The Committee held a wide ranging exchange of views and heard a number of expert presentations which contributed to identifying and clarifying a number of issues and to a clearer perception of the various positions. The Committee,

while aiming at identifying areas of convergence suitable for further structured work, advanced and further developed the examination and identification of various issues relevant to the prevention of an arms race in outer space. It was recognized once more that the legal régime applicable to outer space by itself did not guarantee the prevention of an arms race in outer space. There was again recognition of the significant role that the legal régime applicable to outer space played in the prevention of an arms race in that environment and of the need to consolidate and reinforce that régime and enhance its effectiveness and of the importance of strict compliance with existing agreements, both bilateral and multilateral. There was general recognition of the importance of the bilateral negotiations between the Union of Soviet Socialist Republics and the United States of America and it was stressed that bilateral and multilateral efforts were complementary. In the course of the deliberations, the common interest of mankind in the exploration and use of outer space for peaceful purposes was acknowledged. In this context, there was also recognition of the importance of paragraph 80 of the Final Document of the first special session devoted to disarmament, which stated that "in order to prevent an arms race in outer space, further measures should be taken and appropriate international negotiations held in accordance with the spirit of the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and other Celestial Bodies". The Ad Hoc Committee continued its examination of existing proposals and gave a preliminary consideration to a number of new proposals and initiatives aimed at preventing an arms race in outer space and ensuring that its exploration and use will be carried out exclusively for peaceful purposes in the common interest and for the benefit of all mankind.

61. In the context of their contribution to the discussions on all aspects of the mandate and work programme, the importance of the presentations in the Committee relating to confidence-building measures and to greater transparency and openness in space made in the course of the 1991 session was recognized by the Committee. Although cognizant of the various positions on these matters the Committee also recognized the relevance of that discussion to the work of the Committee. The Committee also noted the valuable and significant contribution to this discussion of the experts from many delegations and expressed its appreciation to those delegations that provided those contributions. The Committee equally expressed its appreciation of the preliminary work done by the Friends of the Chairman, viewing the outcome of

their exercise as an encouraging development in the process of building upon the areas of convergence. The Committee recommended that this exercise be continued in 1992.

62. It was agreed that substantive work on this agenda item should continue at the next session of the Conference. It was recommended that the Conference on Disarmament re-establish the Ad Hoc Committee on the Prevention of an Arms Race in Outer Space with an adequate mandate at the beginning of the 1992 session, taking into account all relevant factors, including the work of the Committee since 1985.

A N N E X

The present Annex contains the lists of topics that were presented by the Chairman corresponding to each one of the three items of the Committee's Programme of Work. The lists were elaborated to enable the Committee to structure its deliberations in an orderly and systematic manner. They do not represent in this sense an agreed or exhaustive listing nor do they reflect an order of priority among the items. The lists of topics reflect the questions on which the Committee has been working thus far and that could constitute a guide for future deliberations.

LIST OF TOPICS FOR DISCUSSION UNDER ITEM 1 OF THE PROGRAMME OF WORK: EXAMINATION AND IDENTIFICATION OF ISSUES RELEVANT TO THE PREVENTION OF AN ARMS RACE IN OUTER SPACE

I. The Prevention of an Arms Race in Outer Space as a matter of priority in the international agenda.

1. Determination of the scope and objectives of multilateral work under the agenda item.
2. The status of Outer Space:
   - as the common heritage of mankind which should be used exclusively for peaceful purposes;
   - as the province ("apanage") of mankind.
3. The identification of the functions performed by space objects and of threats confronting them.
4. The need for identification and elaboration of mutually-agreed legal terms:
   - possible elaboration of a glossary of relevant definitions
   - discussion or possible updating of Canadian working paper CD/716 on "Terminology Relevant to Arms Control and Outer Space"
   - additional sources: UNIDIR's report on Problems Related to Outer Space (1987)
   - other sources.
5. Examination of sufficiency and adequacy of the existing legal regime.
6. Approaches to reach a common understanding of what the existing legal norms do with regard to outer space activities:
   - recognition of limitations of the existing regime.
7. Functioning of the existing legal instruments:
   - encouragement for wider participation and fuller compliance as generally acceptable means for strengthening of the regime.

II. Relationship between space activities, security and stability.

1. The absence at present of weapons in space.

- acknowledgement of non deployment, at present, of weapons in outer space
- existence of ground-based weapons aimed at space located targets
- testing of air-based weapons aimed at space located targets
- space-based weapons at research stage.

2. The relationship between the Prevention of an Arms Race in Outer Space and Arms Limitation and Disarmament Measures in other areas.

- interrelation between measures related to Outer Space and other aspects of the disarmament and arms limitation domain.

3. Vulnerability and immunity of satellites, their role and use for purposes of reliable verification.

4. Different concepts relating to International Verification Systems:

- comprehensive, combined
- treaty specific
- National technical means additioned by other methods suitable for multilateral agreements
- analysis of technologies available.

5. Questions relating to compliance.

6. The need for information on how outer space is being used:

- confidence building and predictability synthetic approach

7. National Space programmes of military significance.

III. New trends and dimensions of the Arms Race and its possible impact on the prevention of an Arms Race in Outer Space

1. Impact of science and technology in the prevention of an arms race in outer space.

IV. Importance and scope of the bilateral negotiations between the Union of Soviet Socialist Republics and the United States of America

1. Harmonization of work at the bilateral and multilateral levels.

2. Role of the Conference on Disarmament.

LIST OF TOPICS FOR DISCUSSION UNDER ITEM 2 OF THE PROGRAMME OF WORK: EXISTING AGREEMENTS RELEVANT TO THE PREVENTION OF AN ARMS RACE IN OUTER SPACE

I. General consideration on the legal regime applicable to Outer Space relevant to the prevention of an Arms Race in this field

1. Peaceful Uses

2. Non-aggressive uses

3. Military uses.

4. Alternative approaches. The concept of Non Interference with Non Aggressive Activities of Space Objects.

II. Sources

1. Customary Law

2. The Charter

- Preamble.
- Art. 1 (1)
- Art. 2 (2) and (4)
- Art. 51

III. The Outer Space Treaty of 1967

1. Article IV

- scope of the prohibition
- possibility to ban activities or weapons not included in the prohibition set forth by Art. IV through the development of the concept of Non Interference with Non Aggressive Activities of Space Objects.

2. The question of the principle of exclusive use for peaceful purposes as reflected in the Treaty.

3. Perceived lacunae.

4. The question of the existence of a "double" regime applicable to Outer Space.

IV. Adequacy/Inadequacy-Sufficiency/Insufficiency

1. Limitations and loopholes.

2. consolidation, reinforcement, development:

- by direct amendments
- through an indirect approach (CBMS)

3. participation

V. The role of the Bilateral Agreements

1. The ABM treaty.

VI. The Strategic Defenses

1. Their impact on the problem under consideration:

- protection against ballistic missile attacks.

LIST OF TOPICS FOR DISCUSSION UNDER ITEM 3 OF THE PROGRAMME OF WORK: EXISTING PROPOSALS AND FUTURE INITIATIVES ON THE PREVENTION OF AN ARMS RACE IN OUTER SPACE

I. The Outer Space Treaty

1. Existing restrictions and scope of the instrument.

2. Amendment proposals:

2.A. Analysis of the consistency of Art. IV under the perspective of the regime applicable to Outer Space as distinct from the one confined to the Moon and Other Celestial Bodies. Consequential amendment.

2.B. Extension of the present prohibition to all kinds of weapon systems (CD/851).

2.C. Enlargement of the prohibition spelt out in art. IV to make it applicable to any kind of weapon systems (CD/939).

II. Anti-Satellite Weapon Systems (ASATs)

1. Banning of all ASAT weapons.

2. The question of banning dedicated ASAT weapons/specialized ASAT systems.

3. Banning of ASAT-mode testing of other weapon devices.

4. Gradual approach: 1. first use limitations; 2. rules of the road leading to a Comprehensive Ban on Satellite Intercept Capability.

5. Conclusion of an Additional Protocol for the purpose of prohibiting the development, production, storage and deployment of anti-satellite weapons not stationed in Outer Space.

III. Confidence-Building Measures

1. Synthetic Approach. Confidence Building and Predictability Measures in Outer Space.

2. Improvement of Data Bases.

3. The Registration Convention:

1. strengthening of its regime

1.A additional protocol

1.B. refinement of information to be supplied as provided for in art. IV of the Convention

1.C. possible additional criteria

- pre-launch information
- announcement of parameters
- updating
- other.

2. Voluntary Data Exchanges

2.A Declaration of Non Deployment of Weapons in Outer Space

3. Rules of the Road Concept

3.A restrictions on very low altitude overflights by manned and unmanned spacecraft

3.B advanced notice of launch activities

3.C specific rules for agreed and possible defended "keep out" zones

3.D grant or restrictions of the right of inspections

3.E limitations to high velocity fly-bys

3.F limitations on trailing

3.G consultation on ambiguous situations

4. Code of Conduct Concept:

4.A Codification of the principle of non-interference with non-offensive space activities

4.B International Trajectography Centre - UNITRACE

5. Data Base

5.A Establishment of a Data Base on the launching of satellites and the collection and classification of technical data

6. Combined Approaches

6.A The "Open Outer Space" concept

IV. The Role of the New Technologies

1. Non Nuclear Defences against strategic ballistic missiles

2. Phased program for co-operative transition to increasing reliance on such defences

3. Predictability Measures.

V. Verification

1. General:

1.A interrelationship between verification in space and on earth's surface related to space

1.B definitional questions (identification of space activities which have inherent arms applications)

1.C practical difficulties including resources and funding

1.D the need to evolve from the almost exclusive use of National Technical Means of Verification to other methods involving multilateral agreements

2. Second Additional Protocol on Verification. Ref. CD/939.

3. Verification of Space activities. The question of confidentiality. Disclosure of information.

4. Utilization of commercial space based remote sensing imagery.

5. Agency for Processing of Space Images.

6. Protection (immunity) of satellites serving as National Technical Means of Verification.

7. Technologies available:

7.A microwave radar imaging

7.B satellite-borne sensors

7.C infra-red devices

7.D tagging of satellites

7.E other.